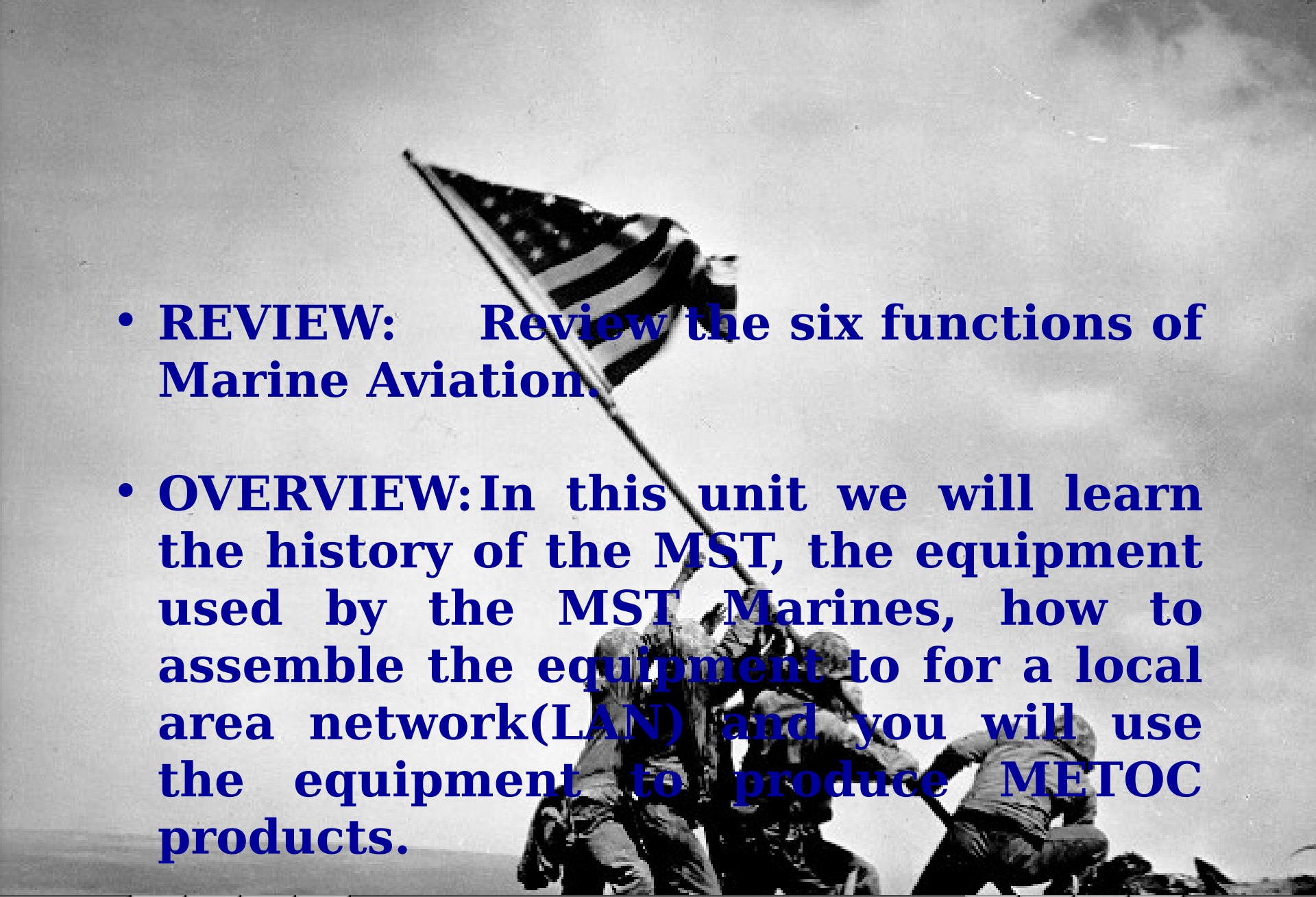
INTRODUCTION TIME: 15 Min

- **ATTENTION: In the last unit you learned the six functions of Marine Aviation and how an understanding of each of them will enable the forecaster to better the customer.**

- **MOTIVATION: As the war-fighter learned that weather affects all aspects of the battle the need for METOC support increased. The MST is the means of bringing METOC support to the battlefield.**



- **REVIEW: Review the six functions of Marine Aviation.**

- **OVERVIEW: In this unit we will learn the history of the MST, the equipment used by the MST Marines, how to assemble the equipment to for a local area network(LAN) and you will use the equipment to produce METOC products.**

- **TRANSITION: Let’s start by taking a look at the history of the MST.**

Marine Air Ground Task Force (MAGTF)

- 1c. Relate the mission and roles of the Meteorological Support Team to the MAGTF and the Meteorological Mobile Facility (R)

History

- **The pre-Desert Shield/Storm focus of Marine Corps weather was directed towards the Aviation Combat Element (ACE) of the Marine Air/Ground Task Force (MAGTF)**
- **Post Desert Shield/Storm**
  - **Meteorological/oceanographic study commissioned by Marine Corps Combat Development Command (MCCDC)**
  - **Final report identified requirement to support all elements of the MAGTF (CE, GCE, ACE & FSSG)**

History

- **Growing pains**
  - **Real world operations and contingencies**
    - **Somalia - Operation "Just Cause"**
      - **Exercised MST concept**
      - **Poorly planned and executed**
    - **Marine Expeditionary Unit (MEU) Support**
      - **Exercised MST concept**
      - **Mixed results**

History

- Operational training and exercises
  - Korea - Ulchi Focus Lens (UFL)
    - Exercised MST concept
    - Scripted exercise, does not represent potential problems
  - MCAGCC 29 Palms - Combined Arms Exercise (CAX)
    - Exercised concept MST concept
    - Status quo - business as usual

Mission/Roles

- **Table of Organization (T/O)**
  - **One (1) Weather Service Officer - 6802 (WO)**
  - **Two (2) Weather Forecasters - 6842 (SSgt/GySgt)**
  - **Two (2) Weather Observers - 6821 (Cpl)**
  - **No technicians (6493) assigned**

Mission/Roles

- **Table of Equipment (T/E)**
  - **Interim Mobile Oceanography Support System (IMOSS)**
  - **Portable METOC subsystem (NITES IV)**

Mission/Roles

- **Capabilities and limitations**
  - **Unclassified /classified**
  - **NIPRNET/SIPRNET**
  - **Main module**
    - **Primary workstation**
    - **Tactical Decision Aids (TDAs) software**
    - **Administrative/Briefing software**
    - **Local Area Network (LAN) capable**
    - **MetMF(R) interface**

Mission/Roles

- **Communications module**
  - **Radio Teletype (RT) broadcasts**
  - **Weather Facsimile (WEFAX) products**
  - **Local Area Network (LAN) capable**
  - **Receive only**
  - **Main module back-up**

Mission/Roles

- **Satellite module**
  - **NOAA reception only**
  - **No cryptographic equipment; therefore, no DMSP reception capability**
  - **Automatic Picture Transmission (APT)**
  - **Local Area Network (LAN) capable**
  - **Receive only**
  - **Main module back-up**

Mission/Roles

- **Command requirements**
  - **Command Element (CE) - the Marine Expeditionary Force (MEF) headquarters requires forecasts of critical meteorological and oceanographic elements such as:**
    - **Aviation flight conditions**
    - **Sea surf/swell conditions**
    - **Tidal/current data**
    - **Warnings/advisories of extreme/hazardous weather conditions**
    - **Weather conditions that will affect communications**

Mission/Roles

- **Ground Combat Element (GCE) - Marine Corps doctrine stresses expeditionary (to include amphibious) operations and is maneuver warfare oriented**
  - **The Ground Combat Element (GCE) requires a higher level of support**
  - **Requires support in the form of graphic products used for briefing the weather slice of the Intelligence Plan of the Battlefield (IPB)**
  - **Focus should be on the 24-48 hour range**
  - **Examples of required information is contained in Marine Corps Warfighting Publication 3-35.7**

Mission/Roles

- **Aviation Combat Element (ACE) requires precise, current weather information for all aircraft operations**
  - **Forecasts should focus out for up to 96 hours**
  - **Areas of interest should include at a minimum: home base, alternate airfields, destination airfields, refuel/tanker areas, Forward Arming and Refueling Points and target areas**
  - **Aviation specific parameters should include at a minimum: altimeter settings, ceiling heights, pressure/density altitudes, cloud bases/tops , temperatures, wind speeds/directions, icing and turbulence**

Mission/Roles

- Combat Service Support Element (CSSE) operations can be heavily influence by extreme weather conditions
  - Meteorological extremes can have a significant effect on equipment and personnel
  - Areas of interest should focus on the material support to the Marine Air/Ground Task and the movement and support of equipment and personnel
  - CSSE specific parameters should include at a minimum: extreme hot and cold, heavy precipitation (liquid, freezing and frozen), and unfavorable sea states

Mission/Roles

- **Meteorological Mobile Facility (MetMF) verses MetMF Replacement (R)**
  - **Meteorological Mobile Facility**
    - **Footprint consisted of 3-4 8 x 8 x 20 shelters (mobile facilities)**
    - **Required heavy lift to embark**
    - **Limited communications outside the MWSS area of responsibility**
    - **No NIPRNET/SIPRNET capability**

Mission/Roles

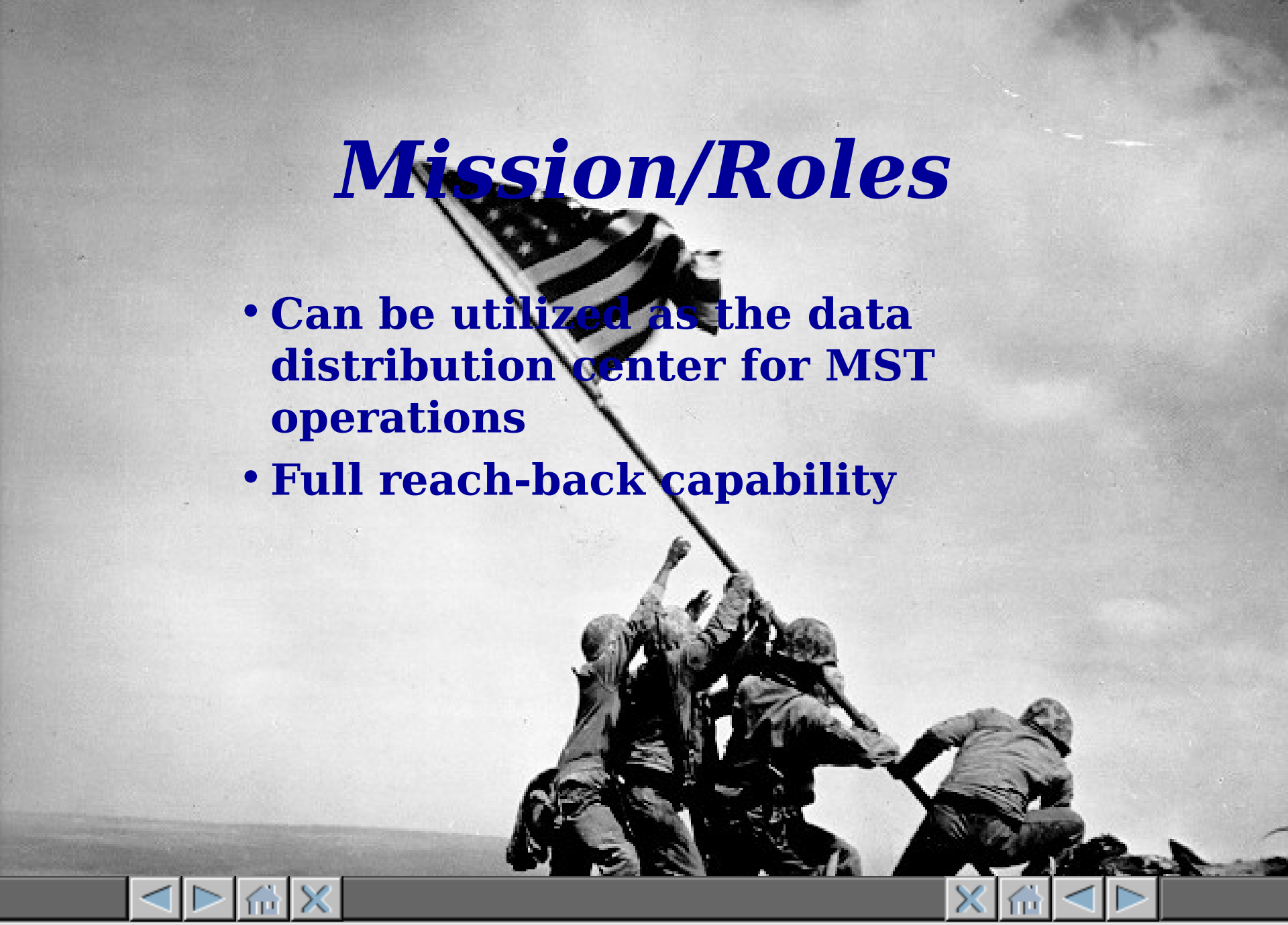
- **No secure communications**
- **No portable equipment/sensors**
- **Designed for ACE support only**
- **Resident in the MWSS only**

Mission/Roles

- **Meteorological Mobile Facility (R)**
  - **Footprint consists of one 8 x 8 x 20 shelter (mobile facility)**
  - **Lift requirement resides in all elements of the MAGTF**
  - **Designed to embark on KC-130 aircraft**
  - **NIPRNET/SIPRNET capable**
  - **Communications suite compatible with current MAGTF C4I structure**
  - **Equipped with remote sensors**

Mission/Roles

- **Can be utilized as the data distribution center for MST operations**
- **Full reach-back capability**

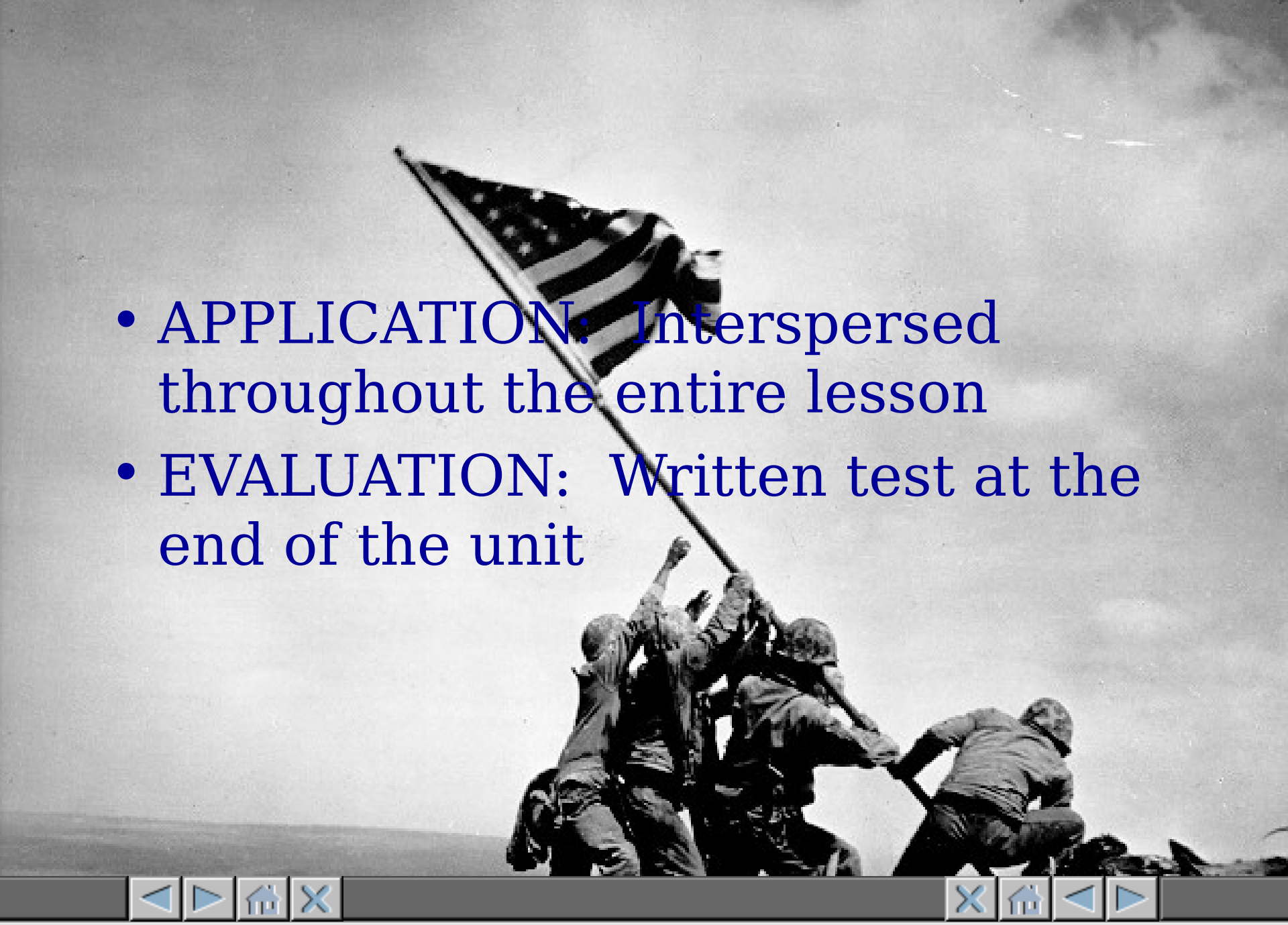


Mission/Roles

- **Naval meteorology /oceanography communications architecture**
  - **Regional centers**
    - **Provide primary meteorological products and service to designated areas of responsibility**
    - **Examples of support include: Joint METOC Viewer (JMV) queries. sea surface/swell data, numerical products**

Mission/Roles

- **Facilities and detachments**
  - **Facilities include Naval Air Stations and Weather Offices**
  - **Detachments include small, specialized detachments - NEXRAD detachment - Oklahoma, Climatology detachment - Asheville**



- APPLICATION: Interspersed throughout the entire lesson
- EVALUATION: Written test at the end of the unit